This is the electronic version of the Annual Fire Weather Report. It contains the essential information as required by National Weather Service Directive 10-404. (*scott weishaar*)

Table one shows the lightning frequency, by area, for the 2015 season.

TABLE 1 - 2015 LIGHTNING DATA (MAY THROUGH OCTOBER)

AREA	# LIGHTNING DAYS 2015	AVE. # DAYS (LAST 20 YEARS)	PERCENT AVE.
ZONES 601/612	2	6.20	32.3%
ZONES 602/603	7	7.70	90.9%
ZONE 604	8	8.50**	94.1%
ZONES 605/607/660	15	12.40	121.0%
ZONES 606/608	13	13.90	93.5%

***** Average over 22-year period.***

DATA OBTAINED FROM BLM LIGHTNING DETECTION AND NORTHWEST COORDINATION CENTER

GOVERNMENT CAMP SNOW DEPTH: The 2014-15 North Oregon Cascade snowfall was the second consecutive year of below-normal snowpack. It was one of the worst snow seasons in the past 20 years. A little early-season snowfall resulted in a Government Camp snow depth of 12 inches on November 14th. This disappeared during the Thanksgiving holiday, followed by a few inches at the end of November. Snow depth dwindled to zero on December 9th and was an inch or less through Christmas Eve. Late-December storms increased the snow depth to 21 inches on December 30th, which was the highest for the snow season. Snow cover vanished by January 16th. The lack of snow continued through the end of January through March. In fact, the Government Camp snow depth was near or at zero from January 16th through the end of March. A little snow fell in April, but the maximum snow depth was just 7 inches, which occurred on the 6th. The last day of measurable snow depth was one inch on April 26th. Typically, snow cover persists through at least the end of May. The largest single-day jump was 12 inches on November 14th, the first day of measurable snow depth for the season.

GOVERNMENT CAMP PRECIPITATION: For the months November 2014 through May 2015 Government Camp experienced above-normal precipitation in November, average precipitation in December, and then below-normal values January through May. The overall total was 12.55 inches below normal, or just 82% of average. Above-average precipitation occurred November through January, followed by above-normal totals February through April and close to average precipitation in May.

RED FLAG WARNING STATISTICS FOR 2015

Table two shows the Red Flag verification statistics for the 2015 fire season.

TABLE 2 (ALL WARNINGS)

ZONE	# RFW	CORRECT RFW (A)	INCORRECT RFW (B)	MISSED EVENTS (C)	POD A/(A+C)	CSI A/(A+B+C)	FAR (1-[A/(A+B)])
601	1	0	1	1	0.000	0.000	0.000
612	1	0	1	0	0.000	0.000	0.000
602	4	2	2	1	0.667	0.400	0.500
603	3	2	1	0	1.000	0.667	0.333
604	7	7	0	1	0.875	0.875	0.000
605	5	2	3	0	1.000	0.500	0.500
606	4	2	2	0	1.000	0.500	0.500
607	6	4	2	0	1.000	0.667	0.333
608	4	3	1	1	0.750	0.600	0.250
660	5	2	3	0	1.000	0.400	0.600
TOTALS (ALL)	40	24	16	4	0.857	0.545	0.400
LIGHTNING	10	4	8	3	0.571	0.267	0.667
WIND/RH	5	2	3	1	0.667	0.333	0.600
HAINES 6	25	18	5	0	1.000	0.783	0.217

NUMBER OF WARNED EVENTS: 7

EVENTS PRECEEDED BY A WATCH: 4 OR 57%
MISSED EVENTS: 3

NOTE: Refer to the Annual Operating Plan for complete Red Flag criteria.

WARNING NOTES – A warning was issued 0417 PDT June 29th for zones 607 and 660 due to lightning. It was a no-lead time event as unexpected lightning moved into the Columbia Gorge late that night.

One event, June 25th-28th, lasted for 2 or more days and covered multiple causes. This instance was broken up into two separate events. In addition, Fire zones 601, 602, and 604 cross state-boundaries. Warnings for these zones were identified as Oregon and/or Washington. Thus, for events covering all of zone 604, two warnings were counted.

EVENT LEAD TIMES

Tables 3 and 4 show the respective warning and watch lead times for all events in 2015.

TABLE 3 – WARNING LEAD TIMES

EVENT	*RANGE OF LEAD TIMES*	*AVE. ZONE LEAD TIME*
June 25-28 (Haines 6/Lightning)	**31 hrs 36 min ZONE 608** **27 hrs 36 min ZONE 604**	**28 HRS 56 MINS**
June 29 (Lightning)	**0 hrs 00 min ZONE 607** **0 hrs 00 min ZONE 660**	**0 HRS 00 MINS**
July 28-31 (Haines 6)	**3 hrs 35 min OR ZONE 602** **5 hrs 22 min WA ZONE 602** **20 hrs 08 min ZONE 603** **22 hrs 08 min WA ZONE 604** **45 hrs 24 min OR ZONE 604** **46 hrs 17 min ZONE 605** **21 hrs 18 min ZONE 606** **42 hrs 38 min ZONE 607** **22 hrs 12 min ZONE 608** **16 hrs 40 min ZONE 660**	**24 HRS 34 MINS**
August 9-11 (Lightning)	**19 hrs 35 min ZONE 607** **ZONE 605 did not verify** **ZONE 606 did not verify** **ZONE 608 did not verify** **ZONE 601 MISSED** **ZONE 602 MISSED**	**19 HRS 35 MINS**
August 17-18 (Haines 6)	**20 hrs 09 min ZONE 608** **21 hrs 23 min ZONE 607** **23 hrs 09 min ZONE 603** **24 hrs 10 min ZONE 604** **25 hrs 29 min ZONE 605** **25 hrs 29 min ZONE 606**	**23 HRS 18 MINS**

August 20-22 (Wind/RH)	**24 hrs 08 min ZONE 604 ZONE 605 did not verify ZONE 607 did not verify ZONE 660 did not verify**	**24 HRS 08 MIN**
OVERALL AVE. LEAD TIME		**21 HRS 36 MINS**

TABLE 4 – WATCH LEAD TIMES

EVENT	*RANGE OF LEAD TIMES*	*AVE. ZONE LEAD TIME*
June 25-28 Haines 6 then Lightning)	**55 hrs 15 min ZONE 608 51 hrs 15 min ZONE 604 Remaining zones did not verify**	**52 HRS 35 MIN**
June 29 (Lightning)	**NO WATCH ISSUED**	**Not Applicable**
July 28-31 (Haines 6)	**NO WATCH OR ZONE 602 NO WATCH WA ZONE 602 NO WATCH ZONE 603 NO WATCH ZONE 660 68 hrs 10 min OR ZONE 604 69 hrs 10 min WA ZONE 604 70 hrs 03 min ZONE 605 45 hrs 04 min ZONE 606 66 hrs 24 min ZONE 607 45 hrs 58 min ZONE 608**	**60 HRS 48 MIN**
August 9-11 (Lightning)	**25 hrs 06 min ZONE 607 ZONE 605 did not verify ZONE 606 did not verify ZONE 608 did not verify ZONE 601 MISSED ZONE 602 MISSED**	**25 HRS 06 MIN**
August 17-18 (Haines 6)	**NO WATCH ISSUED**	**Not Applicable**
August 20-22 (Wind/RH)	**46 hrs 58 min ZONE 604 ZONE 605 did not verify ZONE 607 did not verify ZONE 660 did not verify**	**46 HRS 58 MIN**
OVERALL AVE. LEAD TIME		**54 HRS 03 MINS**

July 28-31 Event: A Watch was issued July 27th at 1443 PDT for zones 604, 605, 606, 607, and 608. The Watch valid time was the afternoon of the 29th through the evening of the 30th. However, on the 28th, before the Watch went into effect, the south part of Oregon Zone 604 met wind/RH criteria. Willow Creek RAWS and Eugene ASOS recorded RH below 25% and 10-minute wind speeds of 10 mph or greater with gusts to 20 mph or more. This was counted as a missed event.

NFDRS VERIFICATION

The Portland office switched to all-points NFDRS forecast in 2009, instead of zone trend forecasts. It was shown by neighboring forecast offices that individual point forecasts yielded higher verification scores versus zone trend forecasts. Prior to 2009, the Portland office provided individual NFDRS forecasts for eight sites: Village Creek, Pebble, Fields, South Fork, Wanderer's Peak, Horse Creek, Yellowstone, and Canyon Creek. Table five (below) shows the 2015 NFDRS verification statistics for the above listed sites. The values in red indicate improvement over the 2014 scores.

TABLE 5 – 2015 SITE-SPECIFIC NFDRS VERIFICATION

SITE	TEMPERATURE			HUMIDITY			WIND		
	FCST MAE	PERS. MAE	SCORE	FCST MAE	PERS. MAE	SCORE	FCST MAE	PERS. MAE	SCORE
Village Creek	*3.98*	*6.47*	*38.49%*	*8.56*	*12.86*	*33.44%*	*1.20*	*1.27*	*5.51%*
Pebble	*3.82*	*6.49*	*41.14%*	*9.58*	*13.95*	*31.33%*	*1.44*	*1.45*	*0.69%*
Fields	*3.56*	*6.49*	*45.15%*	*9.45*	*14.95*	*36.79%*	*1.81*	*2.05*	*11.71%*
South Fork	*4.11*	*6.35*	*35.28%*	*11.27*	*16.53*	*31.82%*	*1.49*	*1.46*	*-2.05%*
Wanderer's Peak	*4.15*	*6.68*	*37.87%*	*9.94*	*14.91*	*33.33%*	*1.20*	*1.19*	*-0.84%*
Horse Creek	*3.53*	*6.08*	*41.94%*	*8.71*	*13.30*	*34.51%*	*1.19*	*1.00*	*-19.00%*
Yellowstone	*4.04*	*6.60*	*38.79%*	*10.24*	*14.79*	*30.76%*	*1.90*	*1.86*	*-2.15%*
Canyon Creek	*5.19*	*8.10*	*35.93%*	*10.82*	*17.09*	*36.69%*	*1.24*	*1.38*	*10.14%*

Table six shows the 2015 NFDRS verification statistics, by area, and by zone. Improvement in temperature, RH and wind are shown in blue. Red values indicate lower scores.

TABLE 6 – 2015 NFDRS VERIFICATION

ZONE	TEMPERATURE	HUMIDITY	WIND
601	32.11%	27.64%	2.86%
602	39.49%	31.74%	8.12%
603	34.83%	29.68%	8.11%

604	36.12%	26.57%	9.57%
605	41.71%	32.33%	-2.11%
606	39.97%	27.02%	5.26%
607	40.98%	36.47%	-6.19%
608	43.29%	34.64%	9.20%
612	27.78%	28.88%	11.33%
660	38.56%	35.93%	12.92%
ALL	37.95%	31.42%	7.37%
2014 ALL	39.43%	34.64%	10.66%
2013 ALL	32.92%	31.07%	1.00%
2012 ALL	36.2%	30.2%	-2.2%
2011 ALL	37.4%	32.2%	7.5%
2010 ALL	38.5%	28.1%	5.5%
2009 ALL	40.5%	33.7%	4.0%

FORECASTS AND SERVICES

SPOT FORECASTS

Spot forecast requests in 2015 were down about 30 percent compared to last year. There were 171 spot requests through early December 2015, compared to 199 last year. The number of wildfire spots surpassed the prescribed burn total for the second consecutive year. There were 84 wildfire spots, down from 96 in 2014, and 69 prescribed burn requests, down from 91 last year. The last time wildfire requests eclipsed prescribed requests was in 2009. The 171 total spots exceeded the 21-year average of 146.5. The earliest prescribed burn spot request was the Collins Pile Burn on February 10th. The latest was from the McKenzie District of the Willamette NF October 11th. The earliest wildfire spot request was May 4th, from the North Cascade Unit of the Oregon Department of Forestry (ODF), for the Mill City Fire. The latest wildfire request occurred October 11th for the Bald Butte Fire, from the Middle Fork District of the Willamette NF.

Prescribed fire spot request distribution was concentrated in two periods. Spring burning, primarily in May, accounted for 16 of the 69 total prescribed requests. Warm and dry conditions March through May accelerated fuel conditions. Energy Release Component values (ERC) in early May were more typical of mid to late June. The primary prescribed burn period occurred in September and October, with 40 spot forecast requests. Wildfire spot forecast requests were concentrated in July and August, with 92% of the total.

The use of spot forecasts continues to become more diverse. There were a handful of requests for search-and-rescue missions, training exercises by local fire departments, public safety, and

HAZMAT. There were six spot requests for annual early-spring spray activities. Figure 1 (below) shows the 2015 spot breakdown by month.

The Willamette National Forest has always been one of the primary users of the spot forecast program. The forest accounted for 43 of the 68 Forest Service spot forecast requests. The Gifford Pinchot National Forest remained a primary participant, with 13 spot requests, all but one of which were for wildfires. The US Forest Service accounted for about 40 percent of all spot requests. Typically, the Forest Service provides for nearly 50 percent of all spot requests. The US Fish and Wildlife Service continued to utilize the spot program for its prescribed burn activities. The USFWS submitted 24 requests, nine for wildfires. Other agencies that were prominent in the spot forecast program included the ODF, BLM, the Nature Conservancy, local fire departments, and county sheriff departments. Mountain Rescue Units are becoming more familiar with the spot forecast program, accounting for five requests in 2015.

The most active spot months were July and August. October accounted for another 28 spot requests. Wildfire requests typically start to increase in July and reach a peak in August. The 2015 prime fire season started several weeks earlier than normal, due to a dry and warm spring. Fire season extended through September. Fortunately, lightning frequency during the peak fire season was below normal. There were 30 wildfire spots on federal land, and 25 on state-protected areas.

Figure 1 - 2015 SPOT FORECASTS (BY MONTH)

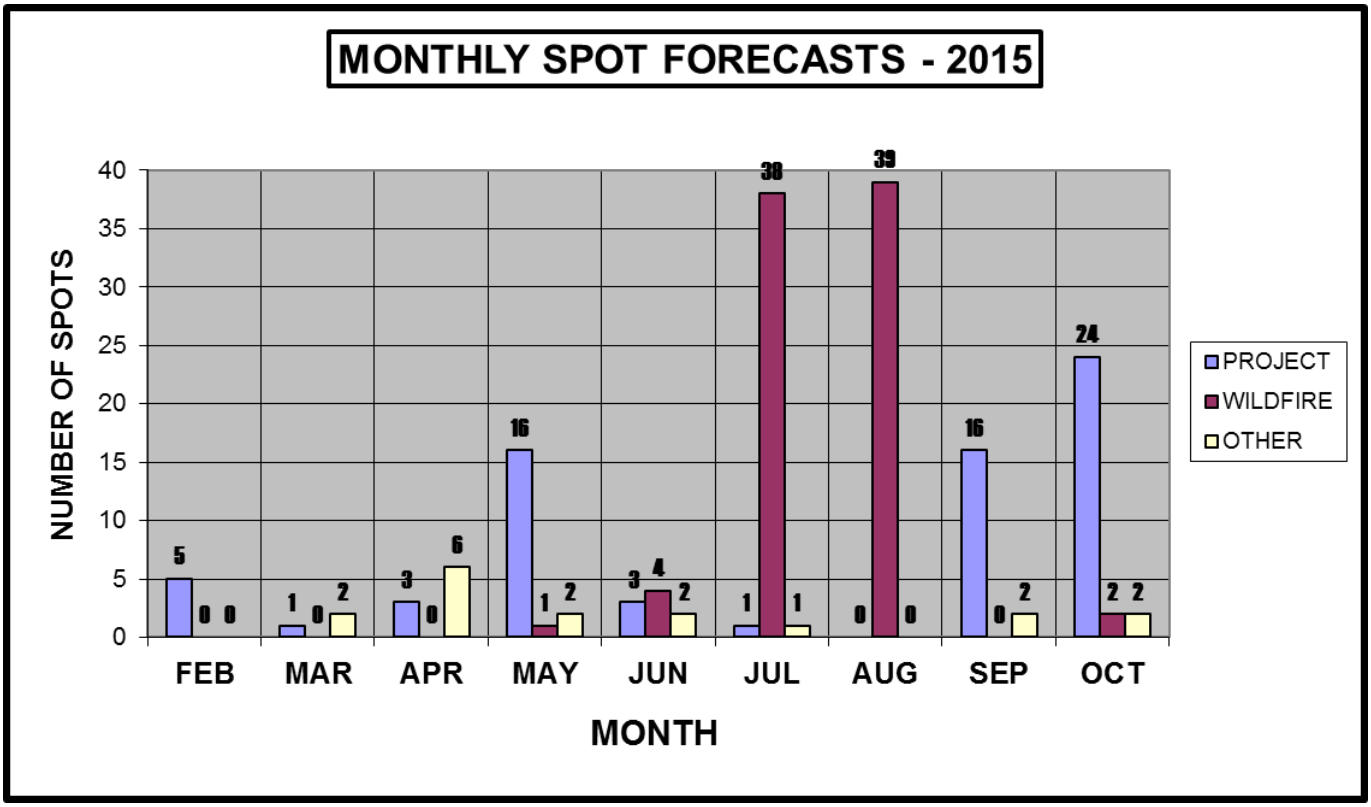


Table 7 (below) shows the annual spot forecast data from 1995 to 2015. Spot frequency showed a dramatic increase from 2000 to 2003, but due to the change in forecast area responsibility and agency requirements for prescribed burns, 2004 spot totals were much lower. Also, some units/districts curtailed prescribed burn activities starting in 2004 due to budget constraints, staffing concerns, or a number of other reasons. The number of prescribed burn spot requests in 2015 was lower than last year.

Seasonal spot totals exhibited a consistent trend from 2008 to 2010, with an average of about 125 spots per season. The 2011 spot season was the busiest since the 2003 transfer of fire weather zones 609, 610, and 611 to the Pendleton office. The 2013 spot tally was a little unusual due to the low number of wildfire spots, but 2014 more than made up for the previous year's low number. The 2015 spot forecast distribution showed two peak periods. The first was the primary wildfire season July through August, with 79 out of the 171 total. The second period was late-summer and fall burning, with another 46 total spots. Like 2014, there seemed to be an overlap late in the season as wildfires were winding down, yet opening the door for optimum prescribed burning conditions. This was especially true for the US Fish and Wildlife agency, specifically in the Central and South Willamette Valley.

TABLE 7 – ANNUAL SPOT FORECAST DATA

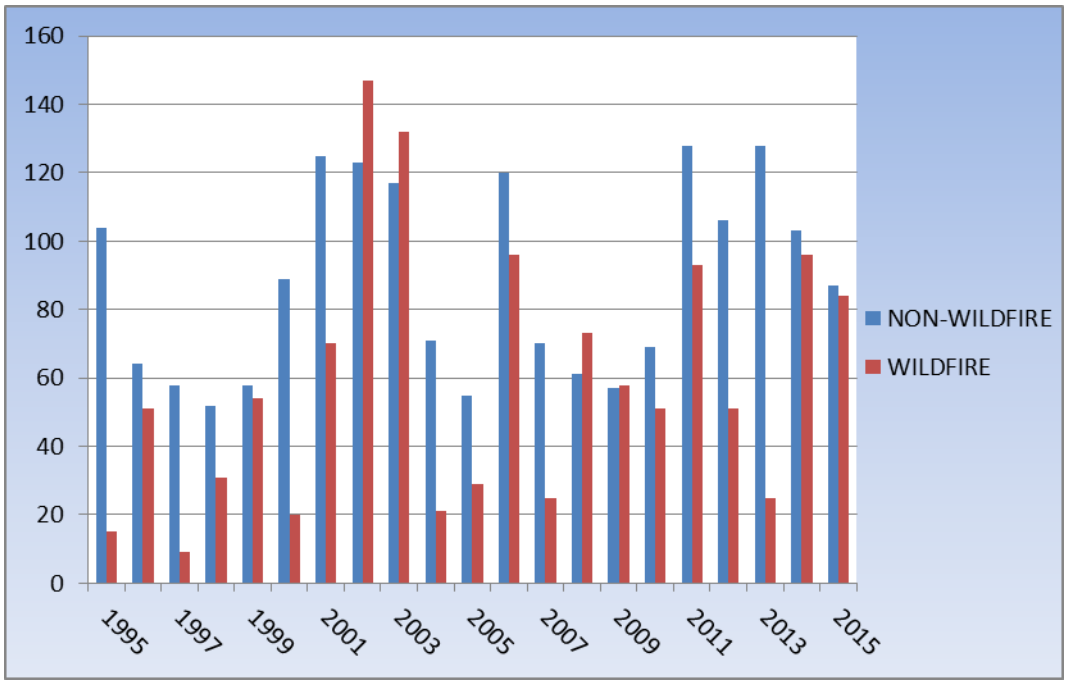
YEAR	PROJECT*	WILDFIRE	TOTAL
1995	104	15	119
1996	64	51	115
1997	58	9	67
1998	52	31	83
1999	58	54	112
2000	89	20	109
2001	125	70	195
2002	123	147	270
2003	117	132	249
2004	71	21	92
2005	55	29	84
2006	120	96	216
2007	70	25	95
2008	61	73	134
2009	57	58	115
2010	69	51	120
2011	128	93	221
2012	106	51	157
2013	128	25	153
2014	103	96	199
2015	87	84	171

**** = INCLUDES TRAINING SPOTS, SEARCH AND RESCUE, AND OTHER MISC. REQUESTS.***

First prescribed spot request: Feb. 10, 2015 Collins Pile Burn Col. Gorge Scenic Area
Last prescribed spot request: Oct. 15, 2015 Pryor 33 McKenzie RD

First wildfire spot request:	***May 4, 2015***	***Mill City Fire***	***ODF Molalla***
Last wildfire spot request:	***Oct. 11, 2015***	***Bald Butte***	***Middle Fork RD***

Figure 2 – Annual Spot Forecast Totals



TURN-AROUND TIME

Turn-around times (see chart below) have been fairly consistent over the past several years. Wildfire spot request turn-around time was several minutes shorter in 2015 compared to previous years. Prescribed burn request turn-around time was about the same as 2014, but remained under 40 minutes. Turn-around time was not counted for next-day spots. Average turn-around time for all other non-wildfire or non-prescribed burn spots was 47 minutes, about 13 minutes faster than 2014. At first glance, this seems like an extraordinarily long duration, but turn-around times for the spring spray forecast requests often exceeded 120 minutes. This lengthy turn-around period was acceptable to the user, per prior verbal or email agreement.

FIGURE 3 - ANNUAL SPOT FORECAST TURN-AROUND TIME

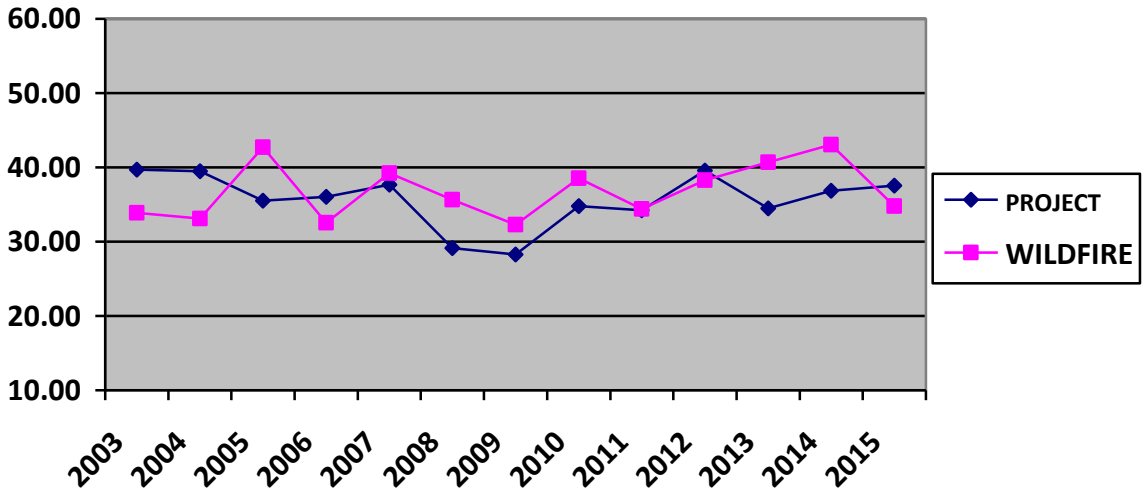


TABLE 8 – TURN-AROUND TIMES

YEAR	PROJECT	WILDFIRE
2015	37:32	34:48
2014	36:52	43:05
2013	34:30	40:43
2012	39:35	38:17
2011	34:13	34:24
2010	34:47	38:33
2009	28:17	32:16
2008	29:07	35:38
2007	37:41	39:14
2006	36:01	32:33
2005	35:30	42:42
2004	39:30	33:06
2003	39:42	33:54

- ***PROJECT TIMES ONLY INCLUDE PRESCRIBED BURN SPOTS***

One of the larger 2015 wildfires was the Willamina Creek Fire, about 9 miles north of Willamina, or a few miles west of Sheridan. The fire was detected around 1700 on August 19th and grew to 260 acres and was contained on August 28th. The fire started on Oregon Department of Forestry (ODF) land, and then spread to BLM and private land.

The Bald Butte Fire, on the Middle Fork District of the Willamette National Forest, started on October 11, 2015. The fire, about four miles northeast of Oakridge, on slopes above Hills Creek Reservoir, was started by a burning car. The fire grew to 54 acres.

The Gold Rush Fire, about 12 miles northeast of Washougal, WA, burned about 60 acres on state-protected land. The fire started on August 17th and was contained on the 23rd.

LARGE FIRES AND IMET DISPATCHES

The 2015 fire season had the potential to be more severe than past years due to an abnormally warm and dry spring and extended summer hot spells. General fuel conditions were well above seasonal normal in May. There was a higher frequency of lightning in August compared to previous years and was the primary cause of most project or complex wildfires. The one exception was the Central Oregon Cascades. There were only two August lightning days in 2015, and no large fires. There were four large fires or fire complexes in the Portland fire area of

responsibility. The largest wildfire was the 53,534-acre Cougar Creek Fire in the South Washington Cascades. The majority of the burned acreage was on Yakima Reservation land, across the crest. Only a very small portion burned on the Portland Fire weather area. Table 9 shows the largest fires of the 2015 fire season.

TABLE 9 – MAJOR FIRES

FIRE NAME	AGENCY	SIZE	START DATE	CONTAIN DATE	CAUSE
Willamina Creek Fire	ODF – Dallas Unit	230	August 19, 2015	September 8, 2015	Unknown
Cougar Creek Fire	BIA – Yakima Agency	53,534	August 10, 2015	September 20, 2015	Lightning
PC Complex	DNR – Pacific Cascade	129	July 19, 2015	July 24, 2015	Human
Mt. Adams Complex	USFS Gifford Pinchot NF	405	July 10, 2015	September 2, 2015	Unknown

The Portland office filled **SEVEN IMET** requests.

1. **BUCKSKIN FIRE (13 DAYS)**

IMET: JON BONK
DATES: June 14th through June 27th, 2015
LOCATION: ICP – Lake Selman, Selma, OR
Incident – Rogue/Siskiyou NF
IMT: Oregon Team 3 (Type II) – IC Doug Johnson
CAUSE: Lightning

2. **MT. ADAMS COMPLEX (8 DAYS)**

IMET: SHAWN WEAGLE
DATES: July 6th through July 13th, 2015
LOCATION: ICP – Trout Lake, WA
Incident – Gifford Pinchot NF – Mt. Adams RD
IMT: Washington Type II Team 4 – IC Gales
CAUSE: Lightning

3. **STOUTS CREEK FIRE (15 DAYS)**

IMET: SCOTT WEISHAAR
DATES: August 2nd through August 16th, 2015
LOCATION: ICP – Days Creek, OR
Incident – Umpqua NF/DFPA and ODF/BLM Roseburg
IMT: ODF Team 1 – Through August 12th - IC Buckman
ODF Team 2 – Assumed command August 13 – IC Klein
CAUSE: Human

4. HORSE FIRE (8 DAYS)

IMET:	SHAWN WEAGLE
DATES:	August 20th through August 27th, 2015
LOCATION:	ICP – Eel River Conservation Camp, CA
	Incident – CDF Humboldt-Del Norte Unit
IMT:	Cal Fire Team 5
	IC – Smith/Bravo
CAUSE:	Lightning

5. ROUTE/MAD RIVER COMPLEX (10 DAYS)

IMET:	SCOTT WEISHAAR
DATES:	August 25th through September 3rd, 2015
LOCATION:	ICP – Trinity High School, CA
	Incident – Shasta and Trinity NF
IMT:	Northern Rockies Type I Team 1 – IC Turman
	NorCal Type II Team – IC
CAUSE:	Lightning

6. CANYON CREEK COMPLEX (16 DAYS)

IMET:	SHAWN WEAGLE
DATES:	August 30th through September 14th, 2015
LOCATION:	ICP – Grant County Fairgrounds, John Day, OR
	Incident – Malheur NF
IMT:	Oregon IMT Team 4 – IC Goff
CAUSE:	Lightning

7. COUGAR CREEK FIRE (10 DAYS)

IMET:	JON BONK
DATES:	September 8th through September 17th, 2015
LOCATION:	ICP – Glenwood, WA
	Incident – Yakima BIA, Gifford Pinchot NF, Washington DNR
IMT:	Nevada Type III – IC Joseph Wyatt
CAUSE:	Lightning

TABLE 10 – TRAINING AND EDUCATIONAL OUTREACH ACTIVITIES

DATES	ACTIVITY	AGENCY/USER	INSTRUCTOR
January 7, 2015	S-190 PCC CASCADE	PORTLAND COMM. COLLEGE	WEISHAAR
January 20, 2015	S-390 BANKS F.D.	LOCAL FD	WEISHAAR/ROCKEY
January 26, 2015	S-390 BEND	CENTRAL OR COMM. COLLEGE	WEISHAAR
February 14-15, 2015	S-290 ASTORIA	CLATSOP COMM. COLLEGE	WEISHAAR
March 7-8, 2015	S-290 FOREST GROVE	LOCAL FD	BONK
March 19-20, 2015	NWS/NWCC MEETING	NWS/NWCC	WEISHAAR ATTENDEE
March 23-27, 2015	IMET VIRTUAL WORKSHOP	NWS	WEISHAAR AND WEAGLE ATTENDEES
April 6-11, 2015	IMET CEE BOISE	NWS	BONK ATTENDEE
April 11-12, 2015	S-290 KELSO	LOCAL FD	WEAGLE
April 15, 2015	RT-130 PACK TEST	HOOD RIVER	WEISHAAR
May 2, 2015	S-190 PCC CASCADE	PORTLAND COMM. COLLEGE	WEISHAAR/NEUMAN
May 7, 2015	RT-130	SANDY	WEISHAAR
June 11, 2015	FIRE WX REFRESHER	COL. GORGE SCENIC AREA	WEISHAAR
June 15, 2015	S-190 CAMP BALDWIN	USFS BARLOW RD	NEUMAN
June 16, 2015	RT-130	HOOD RIVER	WEAGLE
September 24, 2015	S-190 PCC CASCADE	PORTLAND CC	WEISHAAR